

Application No.: 10/826,637
Attorney Docket No.: 25319A

IN THE CLAIMS

1. (Currently amended) A gypsum facing material comprising:

a randomly oriented open mesh filament network substantially impregnated with a first binder resin; and

~~a reinforcing agent applied to said open mesh filament network to improve the stiffness and/or the openness of the mesh;~~

a secondary binder resin applied to said randomly oriented open mesh filament network at a viscosity sufficient to prevent full penetration said secondary coating within said impregnated randomly open mesh filament network, wherein said secondary binder resin comprising includes at least one filler, at least one reinforcing agent, and at least about 6% by weight of a fairly low glass transition organic binder.
2. (Canceled)
3. (Canceled)
4. (Currently amended) The gypsum facing material of claim 3~~1~~, wherein said secondary binder resin further comprises a small level of a crosslinking agent.
5. (Currently amended) The gypsum facing material of claim 3~~1~~, wherein said secondary binder resin further comprises a small level of a thermosetting resin.

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6. (Currently amended) The gypsum facing material of claim 31, wherein said secondary binder resin further comprises a small level of a crosslinking agent and a small level of a thermosetting resin.
7. (Canceled)
8. (Currently amended) The gypsum facing material of claim 71, wherein said fairly low glass transition binder comprises between about 7 and 10 percent of the total weight of said second binder resin.
9. (Original) The gypsum facing material of claim 1, wherein said at least one filler comprises at most approximately 65 percent of the total weight of said secondary binder resin.
10. (Currently amended) The gypsum facing material of claim 31, wherein said fairly low glass transition organic binder comprises an acrylic based resin.
11. (Currently amended) The gypsum facing material of claim 31, wherein said fairly low glass transition organic binder comprises a styrene-butadiene-rubber based resin.
12. (Original) The gypsum facing material of claim 1, wherein said at least one filler is selected from the group consisting of calcium carbonate, aluminum hydroxide, zinc oxide, mixed oxides, iron oxides, chromates, glass beads, silicates, clay, sand, and combinations thereof.

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13. (Original) The gypsum facing material of claim 1, wherein said at least one reinforcing agent comprises a fibrous reinforcing agent.
14. (Currently amended) The gypsum facing material of claim 1, wherein said at least one reinforcing agent comprises ~~a needle-like~~ an acicular reinforcing agent.
15. (Original) The gypsum facing material of claim 1, wherein said at least one reinforcing agent is selected from the group consisting of wollastonite, wood fibers, cellulose, lignin, polypropylene fibers, polyester fibers, glass fibers, gypsum, Chalcedony, acicular man made fibers, metallic wools, steel wool, mica, and combinations thereof.
16. (Original) The gypsum facing material of claim 1 further comprising a low basis secondary veil layered onto said randomly oriented open mesh filament network.
17. (Original) The gypsum facing material of claim 16, wherein said low basis secondary veil comprises a plurality of glass fibers, polymeric fibers, or a mixture thereof, said fibers having a length sufficient to bridge each of a plurality of pores defined within said randomly oriented open mesh filament network.
18. (Original) The gypsum facing material of claim 17, wherein said fibers comprise glass fibers, and said glass fibers are covered by a coating.

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19. (Currently amended) The gypsum facing material of claim 17, wherein ~~at least one of said plurality of said secondary veil comprises polymeric fibers, wherein said polymeric fibers are~~ is selected from the group consisting of polyester fibers, flame retardant polyesters fibers, flame retardant polyolefin fibers[[,]] and polyolefin fibers.

20. (Original) The gypsum facing material of claim 1, wherein said first binder resin makes a stable emulsion in water and is selected from the group consisting of a melamine-based resin, a urea-formaldehyde-based resin, an acrylic based resin, and a modifying resin.

21. (Original) The gypsum facing material of claim 1, wherein said randomly oriented open mesh filament network comprises a plurality of wet use chop strands.

22. (Currently amended) The gypsum facing material of claim ~~19~~21, wherein at least one of said plurality of wet use chops strands ~~comprises Owens Corning's 9501 Advantex® glass filaments~~ includes a low solids sizing composition.

23. (Original) The gypsum facing material of claim 1 further comprising:
a plurality of high aspect ratio particles introduced to said first binder resin prior to the introduction of said secondary binder resin.

24. (Original) The gypsum facing material of claim 23, wherein said plurality of high aspect ratio particles is selected from the group consisting of wollastonite, wood-based fibers, polymeric fibers, cellulose, lignin, polypropylene fibers, polyester fibers, glass fibers,

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gypsum, Chalcedony, acicular man-made fibers, metallic wools, steel wool, mica and combinations thereof.

25. (Original) The gypsum facer material of claim 1, wherein said randomly oriented open mesh filament network is formed in a first headbox, and said reinforcing agent is applied to said network in a second headbox.

26. (Original) The gypsum facer material of claim 1, wherein said randomly oriented open mesh filament network is formed in a headbox, and said reinforcing agent is applied to said network with a brushy roller system.

27. (Currently amended) The gypsum facer material of claim ~~31~~, wherein said secondary binder resin further comprises an inorganic binder.

28. (Original) The gypsum facer material of claim 27, wherein said inorganic binder comprises a compound selected from the group consisting of calcium oxide, calcium silicate, calcium sulfate, magnesium oxychloride, magnesium oxysulfate, aluminum hydroxide and portland cement.

29. – 50. (Canceled)

51. (New) A gypsum facing material comprising:
a randomly oriented open mesh filament network substantially impregnated with a first binder resin;

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a first reinforcing agent applied to said open mesh filament network to improve the stiffness and/or the openness of the mesh; and

a secondary binder resin applied to said randomly oriented open mesh filament network at a viscosity sufficient to prevent full penetration of said secondary binder resin within said impregnated randomly open mesh filament network, wherein said secondary binder resin includes at least one filler, at least one second reinforcing agent, and a fairly low glass transition organic binder.

52. (New) The gypsum facing material of claim 51, wherein said first reinforcing agent comprises high aspect ratio particles.

53. (New) The gypsum facing material of claim 52, wherein said high aspect ratio particles are selected from the group consisting of mica, coated glass fibers, wood-based fibers and polymeric fibers.

54. (New) The gypsum facing material of claim 52, wherein said high aspect ratio particles do not substantially enter into pores defined by said open mesh filament network.

55. (New) The gypsum facing material of claim 51, wherein said at least one second reinforcing agent is selected from the group consisting of wollastonite, wood-based fibers, polymeric fibers, cellulose, lignin, polypropylene fibers, polyester fibers, glass fibers, gypsum, quartz, acicular man-made fibers, metallic wools, steel wool, mica and combinations thereof.

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56. (New) The gypsum facing material of claim 52, further comprising a third binder resin to hold said high aspect ratio particles onto said open mesh filament network.
57. (New) The gypsum facing material of claim 51, wherein said first reinforcing agent is applied with said first binder resin.
58. (New) The gypsum facing material of claim 51, wherein said fairly low glass transition organic binder is present in said secondary binder resin in an amount of at least about 6% by weight.
59. (New) The gypsum facing material of claim 1, wherein said secondary binder resin has a viscosity sufficient to prevent full penetration of said secondary coating within said impregnated randomly open mesh filament network.